P.E.I. WOOD FUEL SURVEY
1990-91

Submitted to:

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TABLE OF CONTENTS

1.0	INTRODUCTION	1
	1.1 Background	1
	1.2 Methodology	1
	1.3 Survey Validity	2
	1.4 Structure of This Report	6
2.0	PROFILE OF RESPONDENTS	7
3.0	PROFILE OF WOOD FUEL USERS	18
4.0	WOOD CUTTERS	32
5.0	WOOD BUYERS	35
6.0	NON-WOOD FUEL USERS	37
7.0	WOOD FUEL ATTITUDES	40
8.0	CONCLUSIONS	48
APPENDIX A	SURVEY INSTRUMENT	

1.0 INTRODUCTION

1.1 Background

Since 1979, the Province of Prince Edward Island has monitored the supply of and demand for residential wood fuel on P.E.I. This fulfils part of the Province's commitment to the Canada-PEI Cooperation Agreement on Alternate Energy Development and Energy Efficiency.

The first residential wood fuel survey was conducted in 1979. Since then, P.E.I. residents have been surveyed on a bi-annual basis to determine their use of wood fuel.

The primary objectives of this survey (1991) are to compile information on residential wood fuel consumption patterns and to monitor the harvesting practices of those who obtain their own supply of wood. The secondary objective is to ascertain the effects of recent energy price and security issues on consumers' fuel choices.

1.2 Methodology

Development of the questionnaire: A review of the surveys of residential wood fuel use conducted since 1979 was completed to ensure that the 1990 survey instrument was consistent and enabled cross comparisons with previous years.

A survey questionnaire was developed using the questionnaire from the previous study as a starting point. The survey questions were primarily concerned with facts about heating fuel use and secondarily with respondents' opinions, attitudes and motivations with respect to wood fuel.

The questionnaire was pre-tested with a random sample of 20 households for possible biases in the wording of the questions. Necessary revisions were made in consultation with the Project Steering Committee. The final questionnaire is included as Appendix 1.

Selection of Sample: A sample of 450 respondents was drawn from the 1991 Island Telephone directory. This sample represents about

1% of the projected 43,170 households on Prince Edward Island (CMHC projection for 1991). The population for the survey included households from all three Counties on P.E.I. Home owners and renters were surveyed.

The telephone numbers for the study were randomly selected by computer, within the parameters of the working number blocks provided by Island Tel. The numbers were broadly distributed among the three counties in accordance with population density. They were generated by a customized program using Mason's Random Algorithm.

Telephone Survey: The respondents identified by this method were contacted from a central office during the last week of February and the first week of March by experienced telephone interviewers. Calls were monitored by senior consultants. The information was obtained in a 5-20 minute telephone interview with a head of the household, with the time varying between wood users and non-users.

A total of 249 non-respondents were recorded. These consisted of the following types; not at home, (calls were made at least 5 times at different times during the day/week to selected numbers before they were considered non-responsive); telephone not in service; unable to respond to questions; non-private residence phone number; and refusals. There were 70 refusals. Alternative numbers were then randomly selected. A total of 450 questionnaires were completed.

Data Format and Analysis: A dBase III+ database was created to correlate the data obtained from the telephone survey and was used for preliminary analysis of the results.

1.3 Survey Validity

Research on the accuracy of telephone surveys of this type of survey is well documented. The telephone numbers were randomly selected, the interviewers were experienced and monitored by senior consultants and the telephone follow-up process was rigorous. The following tables outline the results of some findings compared to the values from the most recent Census data.

TABLE 1.1: HOUSEHOLD COUNTY DISTRIBUTION

	Prince	Queens	Kings	Total
1991 Survey #	168	212	70	450
1991 Survey %	37.3	47.1	15.6	100.0
1986 Census %	33.6	51.6	14.9	100.0

TABLE 1.2: SEX OF RESPONDENT

	1991 Survey		1986 Census
	#	%	%
Male	191	42.4	49.7
Female	259	57.6	50.3
TOTAL	450	100.0	100.0

TABLE 1.3: MEMBERS PER HOUSEHOLD DISTRIBUTION

	#	%	1986 Census %
One	48	10.7	17.6
Two	140	31.1	27.1
Three	76	16.9	18.0
Four or Five	152	33.8	30.5
More than Five	34	7.6	6.7
TOTAL	450	100.0	100.0

Tables 1.1 through 1.3 demonstrate that the survey county distribution, sex of respondents and number of members per

household compare favourably to the 1986 Census data. The higher percentage of one member households may be a result of the lower percentage of respondents who rent.

A bias is the difference between the estimated value of a statistic obtained by random sampling and the true value. The survey was conducted in essentially the same manner as the previous surveys although more questions were asked to ensure that the true values of all the households on the Island were reflected. Two major biases were noted: 1) urban/rural distribution of households and 2) rental versus owner occupied dwelling. The results from these questions and a comparison with 1986 Census data follows:

TABLE 1.4: URBAN/RURAL/COUNTY DISTRIBUTION OF HOUSEHOLDS

		1991 Survey		1986 Census
		#	%	%
PRINCE	Urban	25	14.9	32.9
	Rural	143	85.1	67.1
	Total	168	100.0	100.0
QUEENS	Urban	77	36.3	54.8
	Rural	135	63.7	45.2
	Total	212	100.0	100.0
KINGS	Urban	0	0	0
	Rural	70	100.0	100.0
	Total	70	100.0	100.0
TOTAL	Urban	102	22.7	39.2
	Rural	348	77.3	60.8
	TOTAL	450	100.0	100.0

TABLE 1.5: RENTAL VERSUS OWNER OCCUPIED DWELLING

	1991 Survey		1986 Census
	#	%	%
Own	395	87.8	74.3
Rent	55	12.1	25.7
Total	450	100.0	100.0

The smaller than expected number of respondents who rent may have been the result of several factors: the higher % of respondents in rural areas and the higher proportion of singles, younger people, seniors and single parent families in rental dwellings who may be difficult to contact and therefore non-responsive. This was experienced in the previous survey in 1989.

The greater proportion of rural dwellers in Prince and Queens Counties appears to be a sampling error. It is interesting to note that the reverse problem occurred in the 1989 survey. In recognition of this factor our statistical analysis will incorporate a weighted average inasmuch as wood use between urban and rural dwellers differs significantly.

The weighted average will be calculated by multiplying all urban responses by a factor of 2.2 as explained in the following table. The weighted average will be used throughout the report to correct sample anomalies.

TABLE 1.6: URBAN/RURAL WEIGHTING CALCULATION

	1991 Survey		1986 Census	1991 Survey Weighted	
	#	%	%	#	%
Urban	102(N)	23.0	39.0	224(Nx2.2)	39.0
Rural	348	77.0	61.0	348	61.0
TOTAL	450	100.0	100.0	572	100.0

1.4 Structure of This Report

Following this introductory section, Section 2 presents a profile of survey respondents. Sections 3, 4, 5 and 6 present a summary of survey findings grouped according to the following categories: wood users, wood cutters, wood purchasers and non-wood users. Section 7 summarizes respondents' attitudes regarding wood fuel use and Section 8 presents the conclusions.

2.0 PROFILE OF RESPONDENTS

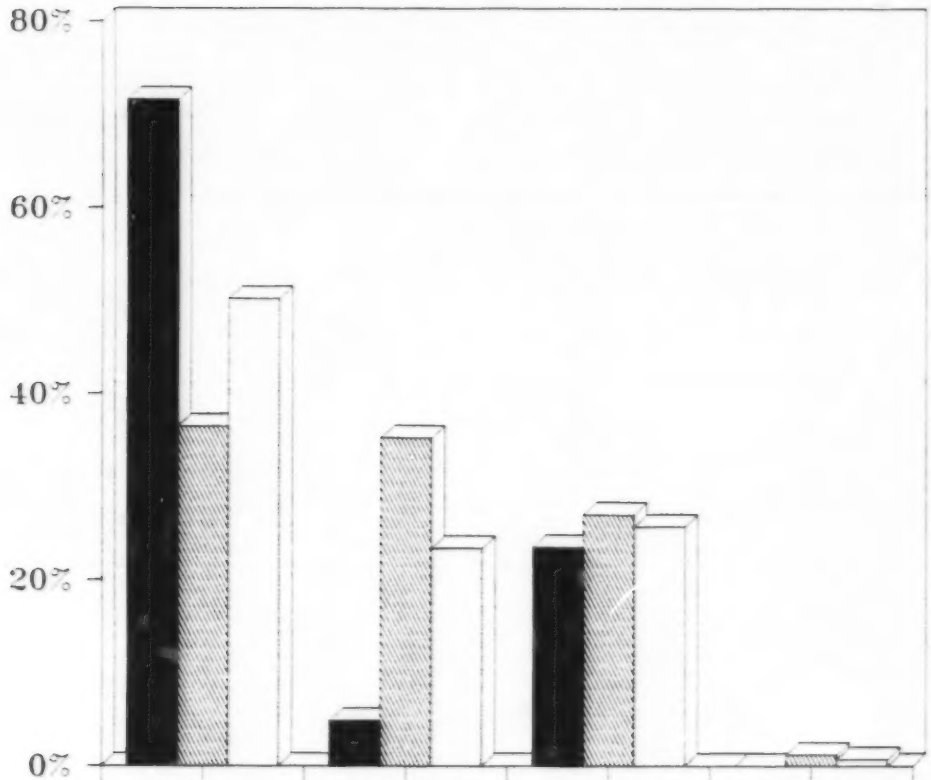
The profile of respondents is presented as a series of tables with a descriptive paragraph highlighting the salient points. Weighted percentages are used where appropriate.

TABLE 2.1: URBAN AND RURAL WOOD FUEL USERS AND NON-USERS (WEIGHTED)

	URBAN			RURAL		TOTAL		
	Act #	Wtd #	%	#	%	Act #	Wtd #	%
NON WOOD USERS	73	160.6	71.6	127	36.5	200	287.6	50.2
CUTTERS	5	11	4.9	123	35.3	128	134	23.4
WOOD BUYERS	24	52.8	23.5	94	27.0	118	146.8	25.7
CUTTERS & BUYERS	0	0	0	4	1.2	4	4	0.7
TOTAL USERS	29	63.8	28.4	221	63.5	250	284.8	49.8
TOTAL	102	224.4	100	348	100	450	572.4	100

Table 2.1 indicates that the majority of rural respondents (63.5%) are wood users and the majority of urban respondents (71.6%) are non-wood users. Most rural wood users (84.2%) indicated using another heating fuel either as a backup or as their primary source of heating; 15.8% used wood alone. All urban wood users indicated using another heating fuel as well as wood and most (69%) reported that they used wood as a secondary heating fuel. Only 33% of rural wood users reported using wood as a secondary heating fuel. Using a weighted total, the table reveals that about half of the respondents are wood users (49.8%) and about half are non-wood users (50.2%). Chart 2.1 graphically depicts urban and rural wood fuel users.

URBAN/RURAL WOOD FUEL USERS AND NON-USERS (Weighted)



	NON-WOOD USERS	WOOD CUTTERS	WOOD BUYERS	CUTTERS & BUYERS
URBAN %	71.6%	4.9%	23.5%	0%
RURAL %	36.5%	35.3%	27%	1.2%
TOTAL %	50.2%	23.4%	25.7%	0.7%

CHART 2.1

TABLE 2.2: PERCENTAGE URBAN AND RURAL WOOD FUEL USERS AND NON-USERS - 1989 AND 1991 (WEIGHTED)

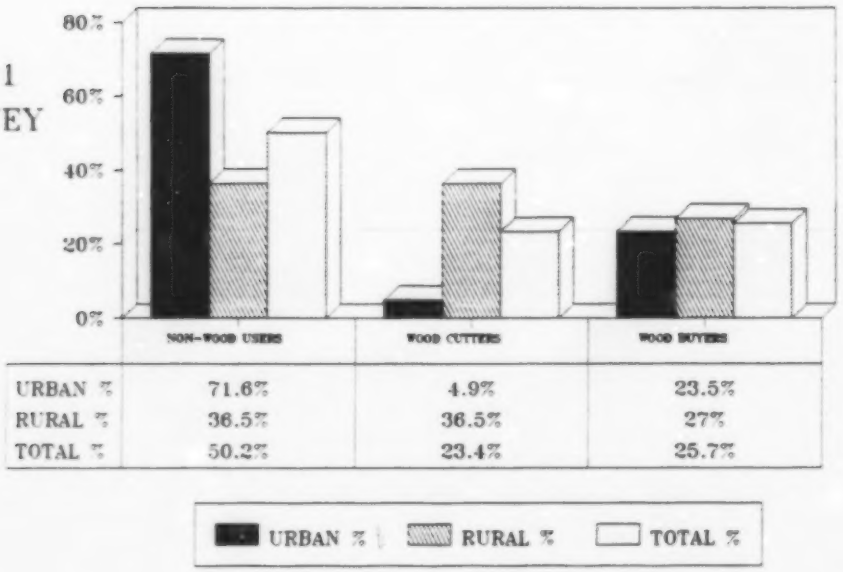
	URBAN	RURAL	TOTAL
Wood Cutters			
1989	11.5	31.1	21.6
1991*	4.9	36.5	23.4
Wood Buyers			
1989	17.2	31.1	24.4
1991	23.5	27.0	25.7
Non-Wood Users			
1989	71.3	37.8	54.0
1991	71.6	36.5	50.2

* respondents (1.2%) indicated that they cut and buy wood; these are included as wood cutters

The percentage of wood users and non-wood users in both the rural and urban areas has remained strikingly constant compared to the 1989 survey figures. The rural and urban percentage breakdown among cutters, buyers and non-users is similar to the 1989 survey; however the urban figures show a significant drop in wood cutters (from 11.5% to 4.9%) and a concurrent rise in wood buyers (from 17.2% to 23.5%). This is depicted in Chart 2.2.

URBAN/RURAL WOOD FUEL USERS & NON-USERS
(Weighted)

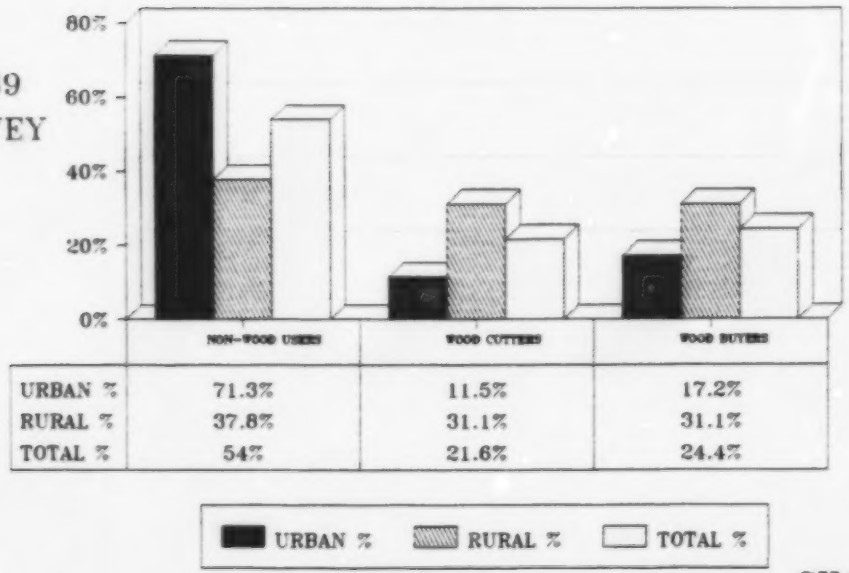
1991 SURVEY



	NON-WOOD USERS	WOOD CUTTERS	WOOD BUYERS
URBAN %	71.6%	4.9%	23.5%
RURAL %	36.5%	36.5%	27%
TOTAL %	50.2%	23.4%	25.7%

URBAN/RURAL WOOD FUEL USERS & NON-USERS
(Weighted)

1989 SURVEY



	NON-WOOD USERS	WOOD CUTTERS	WOOD BUYERS
URBAN %	71.3%	11.5%	17.2%
RURAL %	37.8%	31.1%	31.1%
TOTAL %	54%	21.6%	24.4%

CHART 2.2

TABLE 2.3: COUNTY DISTRIBUTION OF WOOD AND NON-WOOD FUEL USERS (WEIGHTED)

2.3A: PRINCE COUNTY DISTRIBUTION

	PRINCE							
	URBAN			RURAL		TOTAL		
	Act #	Wtd #	%	#	%	Act #	Wtd #	Wtd %
WOOD CUTTERS	1	2.2	4.0	47	32.9	48	49.2	24.8
WOOD BUYERS	2	4.4	8.0	41	28.7	43	45.4	22.9
CUTTERS + BUYERS	0	0	0	0	0	0	0	0
TOTAL WOOD USERS	3	6.6	12.0	88	61.6	91	94.6	47.7
NON-WOOD USERS	22	48.4	88.0	55	38.5	77	103.4	52.2
TOTAL	25	55	100	143	100	168	198	100

2.3B: QUEENS COUNTY DISTRIBUTION

	QUEENS							
	URBAN			RURAL		TOTAL		
	Act #	Wtd #	%	#	%	Act #	Wtd #	Wtd %
WOOD CUTTERS	4	8.8	5.2	48	35.6	52	56.8	18.7
WOOD BUYERS	22	48.4	28.6	32	23.7	54	80.4	26.4
CUTTERS + BUYERS	0	0	0	3	2.2	3	3	1.0
TOTAL WOOD USERS	26	57.2	33.8	83	61.5	109	140.2	46.1
NON-WOOD USERS	51	112.2	66.2	52	38.5	103	164.2	54.0
TOTAL	77	169.4	100	135	100.0	212	304.4	100.0

2.3C: KINGS COUNTY DISTRIBUTION

	KINGS							
	URBAN			RURAL		TOTAL		
	Act #	Wtd #	%	#	%	Act #	Wtd #	Wtd %
WOOD CUTTERS	0	0	0	28	40.0	28	28	40.0
WOOD BUYERS	0	0	0	21	30.0	21	21	30.0
CUTTERS + BUYERS	0	0	0	1	1.4	1	1	1.4
TOTAL WOOD USERS	0	0	0	50	71.4	50	50	71.4
NON-WOOD USERS	0	0	0	20	28.6	20	20	28.6
TOTAL	0	0	0	70	100.0	70	70	100.0

D: TOTAL DISTRIBUTION

	TOTAL		
	Act #	Wtd #	Wtd %
WOOD CUTTERS	128	134	23.4
WOOD BUYERS	118	146.8	25.6
CUTTERS + BUYERS	4	4	0.7
TOTAL WOOD USERS	250	284.8	49.8
NON-WOOD USERS	200	287.6	50.2
TOTAL	450	572.4	100.0

Table 2.3 summarizes the county distribution of wood users and non-users. The county breakdown of wood cutters, buyers and non-users indicates that the county having the largest percentage of wood users (71.4%) is Kings County. Kings County does not have an urban population. Wood users in Prince and Queens county represent 47.7% and 46.1% households respectively. Wood cutters represent a higher percentage of wood users in both Kings and Prince Counties compared to wood buyers. Using a weighted total, wood users represent 49.8% of households on the Island; this is comprised of 23.4% of wood cutters, 25.7% of wood buyers and .7% cutters and buyers.

TABLE 2.4: HOUSEHOLD SIZE OF WOOD FUEL USERS AND NON-USERS (UNWEIGHTED)

	Wood Alone		Wood Primary		Wood Secondary		Total Users		Non-User		Total*	
	#	%	#	%	#	%	#	%	#	%	#	%
One	3	8.6	7	5.8	3	3.2	13	5.2	35	17.5	48	10.7
Two	6	17.1	35	29.2	23	4.2	64	25.6	76	38.0	140	31.1
Three	5	14.3	16	13.3	22	3.2	43	17.2	33	16.5	76	16.9
Four	10	28.6	29	24.2	31	2.6	70	28.0	24	12.0	94	20.9
Five	4	11.4	20	16.7	10	0.5	34	13.6	24	12.0	58	12.9
Five +	7	20.0	13	10.8	6	6.3	26	10.4	8	4.0	34	7.6
TOTAL	35	100.0	120	100.0	95	100.0	250	100.0	200	100.0	450	100.0

Table 2.4 indicates that wood users have a much larger percentage of respondents with households consisting of four or more persons (52.0%) compared to non-users (28.0%) It is interesting to note that 60% of those respondents who use wood alone have households consisting of four or more persons. Non-wood users have a much larger percentage of respondents with households consisting of one or two persons (55.5%) compared to wood users (30.8%).

TABLE 2.5: HOUSING TYPES OF WOOD FUEL USERS AND NON-USERS (WEIGHTED)

A: URBAN HOUSING TYPES

	URBAN WOOD-USER			URBAN NON-WOOD-USER		
	Act #	Wtd #	%	Act #	Wtd #	%
S.Storey Det.	14	30.8	48.3	23	50.6	31.5
Mult. Storey Det.	11	24.2	37.9	15	33	20.5
Split Level	3	6.6	10.3	3	6.6	4.1
Mobile Home	0	0	0	2	4.4	2.7
Other (Multi) Unit Dwelling	1	2.2	3.4	30	66	41.1
Total	29	63.8	100.0	73	160.6	100.0

B: RURAL/TOTAL HOUSING TYPES

	RURAL WOOD-USER		RURAL NON-WOOD-USER		WEIGHTED TOTAL	
	Act #	%	Act #	%	Usr %	NonU %
S.Storey Det.	106	48.0	57	44.9	48.0	37.4
Mult. Storey Det.	90	40.7	40	31.5	40.1	25.4
Split Level	15	6.8	10	7.9	7.6	5.8
Mobile Home	8	3.6	9	7.1	2.8	4.7
Other (Multi) Unit Dwelling	2	0.9	11	8.7	1.5	26.8
Total	221	100.0	127	100.0	100.0	100.0

Single storey detached dwellings and multi storey dwellings are found more frequently in the user categories than in the non-users. Residents of multiple unit buildings rarely burn wood.

TABLE 2.6: DWELLING YEAR OF CONSTRUCTION (UNWEIGHTED)

	USERS		NON-USERS		TOTAL	
	#	%	#	%	#	%
1980-1990	62	24.8	44	22.0	106	23.6
1970-1979	47	18.8	56	28.0	103	22.9
1960-1969	28	11.2	17	8.5	45	10.0
1945-1959	24	9.6	13	6.5	37	8.2
1900-1944	48	19.2	27	13.5	75	16.7
In the 1800's	36	14.4	24	12.0	60	13.3
Don't know	5	2.0	19	9.5	24	5.3
TOTAL	250	100.0	200	100.0	450	00.0

There appears to be little difference in the age of houses among wood users and non-users. The data also revealed that rural housing stock is generally older compared to urban housing stock.

TABLE 2.7: PRIMARY SOURCE OF HEAT BY INCOME CATEGORIES (UNWEIGHTED)

	<$15,000		$15,001 to $35,000		$35,001 to $50,000		>$50,000		No Response	
	#	%	#	%	#	%	#	%	#	%
Wood	23	36.5	46	30.9	28	34.1	13	27.1	43	39.8
Oil	36	57.1	98	65.8	51	62.2	34	70.8	60	55.6
Electricity	3	4.8	-	-	1	1.2	1	2.1	1	0.9
Propane	1	1.6	2	1.3	1	1.2	-	-	3	2.8
Sawdust	-	-	-	-	1	1.2	-	-	1	0.9
Don't know	-	-	3	2.0	-	-	-	-	-	-
TOTAL	63	100.0	149	100.0	82	100.0	48	100.0	108	100.0

This table reveals that of those who responded, the higher the household income category generally, the less likely they are to use wood as a primary source of heat. Oil was the most prevalent primary source of heat. Of the respondents who reported household income of less than $15,000, 36.5% used wood as a primary source of heat compared to 27.1% of respondents who reported a household income of $50,000 and more.

3.0 PROFILE OF WOOD FUEL USERS

As noted in the previous section, about half the respondents (49.8% weighted) reported that they burned wood. The following series of tables summarize the findings with respect to wood fuel users. Weighted percentages are used where appropriate.

TABLE 3.1: INCOME OF WOOD USERS (UNWEIGHTED)

	<$15,000		$15,001 to $35,000		$35,001 to $50,000		>$50,000		No Response		Total	
	#	%	#	%	#	%	#	%	#	%	#	%
Burn wood only	7	24.1	14	19.2	3	5.6	1	3.3	10	15.6	35	14.0
Burn wood with backup	16	55.2	32	43.8	26	48.1	12	40.0	34	53.1	120	48.0
Burn wood as secondary	6	20.7	27	37.0	25	46.3	17	56.7	20	31.3	95	38.0
TOTAL	29	100.0	73	100.0	54	100.0	30	100.0	64	100.0	250	100.0

The preceding table indicates that as the household income of respondents increases the less likely they are to use wood as their sole heating source and, concurrently, the more likely they are to use wood as a secondary heating source. A total of 79.3% of wood users reporting incomes of less than $15,000 burn wood as a primary heating source (burn wood only and burn wood with backup) compared to 43.3% of respondents with incomes reported at $50,000 and over. It should be noted that 14.2% of respondents (64) did not wish to disclose their household income level.

TABLE 3.2: WOOD BURNING APPLIANCES OF WOOD FUEL USERS (UNWEIGHTED)

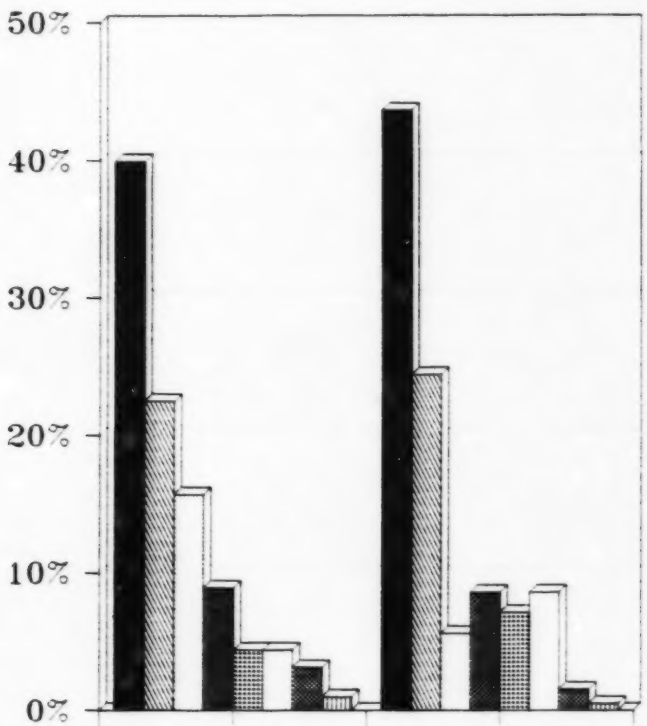
	1991 Survey		1989-1990 Survey
	#	%	%
Airtight Wood Stove	117	39.9	43.6
Wood Furnace	66	22.5	24.4
Kitchen Wood Stove	46	15.7	5.6
Comb. Wood/Oil Furnace	26	8.9	8.6
Franklin/Non-Airtight	13	4.4	7.1
Kemac*	13	4.4	8.6
Fireplace Insert	9	3.1	1.5
Open Fireplace	3	1.0	0.5
TOTAL	293**	100.0	100.0

* Kemac is the trade name for an oil assist unit attached to the back of a wood burning kitchen stove.
** Some respondents gave more than one response

Airtight wood stoves and wood fired air or boiler furnaces continue to constitute about two-thirds of the heating appliances used by wood users. There was a notable decline in the number of kitchen stoves since the previous survey. Wood burning appliances of wood fuel users are depicted graphically in Chart 3.2.

A more detailed analysis of survey results indicates that of the respondents who burn wood, the vast majority (84.6%) indicated that heating was the primary purpose of their wood burning unit. A total of 35 (14%) indicated having more than one such unit. The primary purpose of these secondary units was for cooking and atmosphere. Rural respondents were more likely to cite cooking as the primary purpose of these units, whereas urban respondents were more likely to cite atmosphere.

WOOD BURNING APPLIANCES OF WOOD FUEL USERS
1991 VERSUS 1989 (UNWEIGHTED)



	1991	1989
AIRTIGHT STOVE	39.9%	43.6%
WOOD FURNACE	22.5%	24.4%
KITCHEN STOVE	15.7%	5.6%
WOOD/OIL FURNACE	8.9%	8.6%
FRANKLIN	4.4%	7.1%
KEMAC	4.4%	8.6%
FIREPLACE INSERT	3.1%	1.5%
OPEN FIREPLACE	1%	0.5%

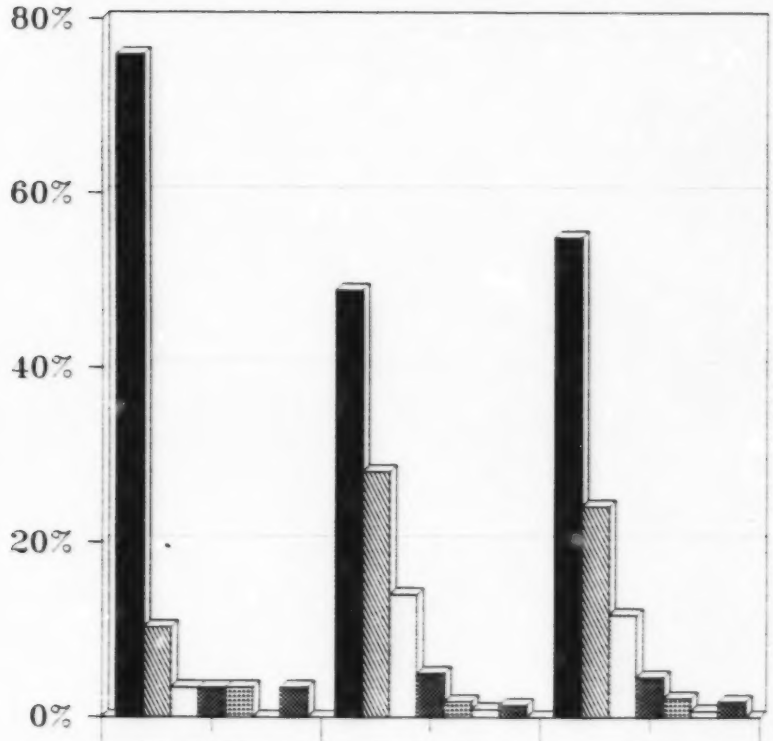
CHART 3.2

TABLE 3.3: DOMESTIC HOT WATER HEATING (WEIGHTED)

	URBAN			RURAL		TOTAL		
	Act #	Wtd #	%	#	%	Act#	Wtd #	Wtd %
Oil	22	48.4	75.9	108	48.9	130	156.4	54.9
Electricity	3	6.6	10.3	62	28.1	65	68.6	24.1
Wood	1	2.2	3.4	31	14.0	32	33.2	11.7
Propane	1	2.2	3.4	11	5.0	12	13.2	4.6
Solar	1	2.2	3.4	4	1.8	5	6.2	2.2
Sawdust	-	-	-	2	0.9	2	2.0	0.7
Don't know	1	2.2	3.4	3	1.4	4	5.2	1.8
TOTAL	29	63.8	100.0	221	100.0	250	284.8	100.0

The most prevalent method for heating domestic hot water among wood users is oil (54.9%), particularly in the urban areas. Rural wood users that also use wood primarily to heat their domestic hot water account for 14.0% of respondents; urban wood users account for 3.4%. The domestic hot water heating of wood burning respondents is depicted graphically in Chart 3.3.

DOMESTIC HOT WATER HEATING
(Weighted)



	URBAN	RURAL	TOTAL
OIL	75.9%	48.9%	54.9%
ELECTRICITY	10.3%	28.1%	24.1%
WOOD	3.4%	14%	11.7%
PROPANE	3.4%	5%	4.6%
SOLAR HEAT	3.4%	1.8%	2.2%
SAWDUST	0%	0.9%	0.7%
DON'T KNOW	3.4%	1.4%	1.8%

CHART 3.3

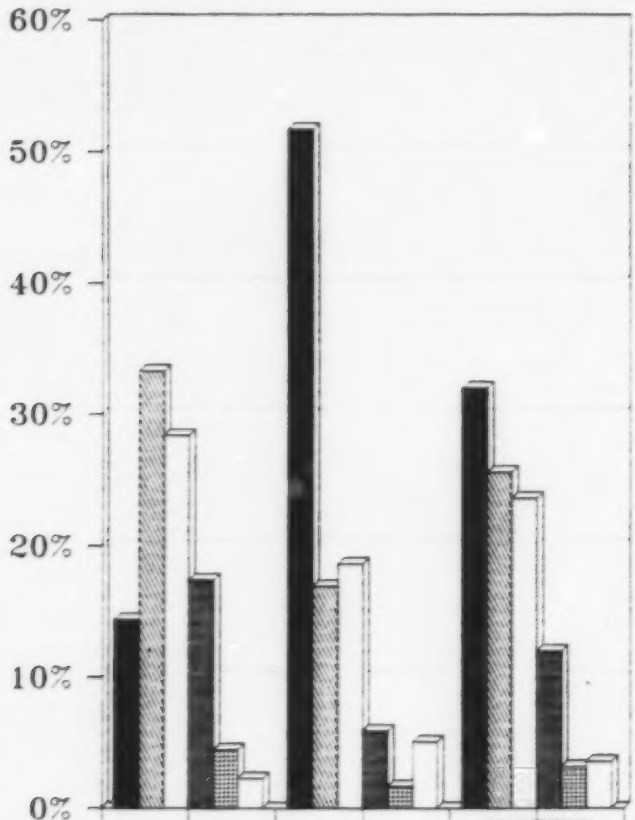
TABLE 3.4: HARDWOOD OR SOFTWOOD USED (UNWEIGHTED)

	CUTTERS		BUYERS		WOOD FUEL USERS	
	#	%	#	%	#	%
Hardwood only	19	14.4	61	51.7	80	32.0
75% Hd 25% Sft	44	33.3	20	16.9	64	25.6
50% Hd 50% Sft	37	28.0	22	18.6	59	23.6
25% Hd 75% Sft	23	17.4	7	5.9	30	12.0
Softwood only	6	4.5	2	1.7	8	3.2
Don't Know	3	2.3	6	5.1	9	3.6
TOTAL	132	100.0	118	100.0	250	100.0

Wood buyers are more likely to purchase hardwood than softwood. Of the cutters who use hardwood only, 17 use less than 25% poplar, pin cherry, or white birch; and 2 use more than 25% poplar, pin cherry or white birch. This table is depicted graphically in Chart 3.4.

HARDWOOD OR SOFTWOOD USED

(Unweighted)



	CUTTERS	BUYERS	USERS TOTAL
HARDWOOD	14.4%	51.7%	32%
75% HARD 25% SOFT	33.3%	16.9%	25.6%
50% HARD 50% SOFT	28.4%	18.6%	23.6%
25% HARD 75% SOFT	17.4%	5.9%	12%
SOFTWOOD	4.5%	1.7%	3.2%
DON'T KNOW	2.3%	5.1%	3.6%

CHART 3.4

TABLE 3.5: GREEN OR SEASONED WOOD BEING USED (UNWEIGHTED)

	1991 SURVEY	
	#	%
Green	6	2.4
Seasoned	201	80.4
Mixture of both	37	14.8
Don't know	6	2.4
TOTAL	250	100.0

Seasoned wood was reported being burned by 80.4% of the respondents; 14.8% reported that they use a mixture of seasoned and green wood. This is consistent with the 1989 survey figures which were 83% and 14% respectively.

The average number of years primary wood users have been using wood on a continuous basis to heat their homes was 24.3 years.

TABLE 3.6: CONSUMPTION COMPARED TO LAST YEAR (UNWEIGHTED)

	1991 SURVEY	
	#	%
About the same	129	51.6
More	25	10.0
Less	78	31.2
None last year	5	2.0
Don't know	13	5.2
TOTAL	250	100.0

More people said they burned less wood compared to last year than said they burned more.

About half of the respondents indicated that their wood fuel consumption was about the same compared to last year. About a third indicated that their wood fuel consumption was less. This may be explained by this year's milder winter compared to last year.

TABLE 3.7: EFFECT OF FUEL PRICE ON WOOD USE (UNWEIGHTED)

	1991 SURVEY	
	#	%
Use more wood	54	21.6
Stay about the same	176	70.4
Use less wood	1	0.4
Switch to oil	1	0.4
Don't know	18	7.2
TOTAL	250	100.0

The majority of respondents (70.4%) indicated that the effect of fuel prices has had no impact on their use of wood fuel.

For the 1990-91 heating season respondents reported the following wood fuel consumption.

TABLE 3.8: WOOD FUEL CONSUMPTION (WEIGHTED)

3.8A: URBAN WOOD FUEL CONSUMPTION

CORDS BURNED	URBAN CUTTERS			URBAN BUYERS		
	Act #	Wtd #	%	Act #	Wtd #	%
0 -> 1	1	2.2	25	8	17.6	36.4
1.1 -> 2	1	2.2	25	4	8.8	18.2
2.1 -> 3	1	2.2	25	4	8.8	18.2
3.1 -> 4	0	0	0	2	4.4	9.1
4.1 -> 5	1	2.2	25	2	4.4	9.1
5.1 -> 6	0	0	0	1	2.2	4.5
6.1 -> 7	0	0	0	1	2.2	4.5
7.1 -> 8	0	0	0	0	0	0
8.1 -> 9	0	0	0	0	0	0
9.1 -> 10	0	0	0	0	0	0
10.1 +	0	0	0	0	0	0
TOTAL	4	8.8	100.0	22	48.4	100.0

TABLE 3.8B: RURAL AND TOTAL WOOD FUEL CONSUMPTION

CORDS BURNED	RURAL CUTTERS		RURAL BUYERS		TOTAL URBAN & RURAL		
	Act #	%	Act #	%	Act #	Wtd #	Wtd %
0 -> 1	6	5.9	9	11.0	24	34.8	14.4
1.1 -> 2	7	6.9	11	13.4	23	29.0	12.0
2.1 -> 3	7	6.9	10	12.2	22	28	11.6
3.1 -> 4	5	4.9	13	15.9	20	22.4	9.3
4.1 -> 5	12	11.8	16	19.5	31	34.6	14.3
5.1 -> 6	13	12.7	7	8.5	21	22.2	9.2
6.1 -> 7	13	12.7	7	8.5	21	22.2	9.2
7.1 -> 8	14	13.7	3	3.7	17	17	7.0
8.1 -> 9	5	4.9	3	3.7	8	8	3.3
9.1 -> 10	9	8.8	1	1.2	10	10	4.1
10.1 +	11	10.8	2	2.4	13	13	5.4
TOTAL	102	100.0	82	100.0	210	241.2	100.0

Table 3.8 provides a summary of wood fuel consumption for rural and urban households for the 1990-1991 heating season. Urban respondents reported a range of .5 to 7 cords consumed per season with a mean of 2.6 cords and a median of 2 cords. Rural respondents reported a range of .25 to 20 cords with a mean of 5.64 cords and a median of 5 cords.

Overall, 63.6% of rural wood cutters burn more than 5 cords of wood in the heating season as compared to 28% of rural wood buyers who burn this amount.

The following chart describes total fuel consumption graphically.

ALL WOODUSERS – WOOD CONSUMPTION
CORDS USED/SEASON (WEIGHTED)

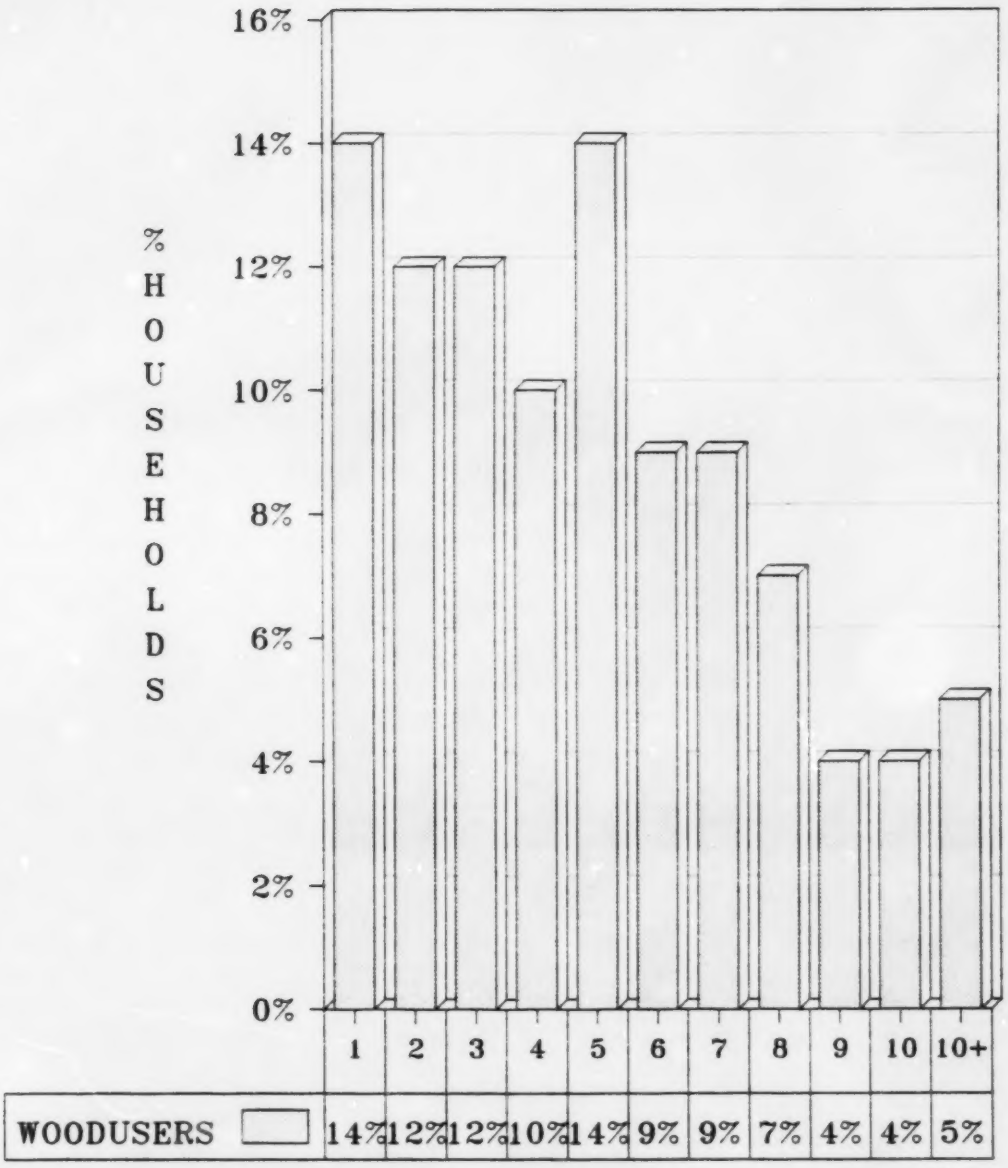


CHART 3.8A

The following two tables break down the wood fuel consumption of various classes of wood burners.

TABLE 3.9: CUTTERS AND BUYERS WOOD FUEL CONSUMPTION (CORDS PER SEASON)

CUTTERS			BUYERS			TOTAL		
Wtd #	W Crds	Ave	Wtd #	W Crds	Ave	Wtd #	W Crds	Ave
110.8	703.2	6.35	130.4	483	3.70	241.2	1186.2	4.92

TABLE 3.10: URBAN AND RURAL WOOD FUEL CONSUMPTION (CORDS)

URBAN			RURAL			TOTAL		
Wtd #	W Crds	Ave	#	Crds	Ave	Wtd #	W Crds	Ave
57.2	148.5	2.60	184	1037.5	5.64	241.2	1186.2	4.92

Wood cutters burn an average of 6.35 cords per season and wood buyers burn an average of 3.70 cords. The 1989 survey revealed that cutters averaged 6.00 cords and buyers averaged 3.92 cords. Urban households burn an average of 2.60 cords per season and rural households burn an average of 5.64 cords. The 1989 survey revealed that urban households averaged 3.61 cords and rural households averaged 5.48 cords. The overall average consumption of wood burners was estimated to be 4.92; this is consistent with the 1989 survey estimate of 4.90 cords per season.

TABLE 3.11: TOTAL WOOD FUEL CONSUMPTION CALCULATION (WEIGHTED)

total households	x	average cords burned	x	census % of owners/renters	x	% wood users

= total estimated Island wood fuel consumption

TABLE 3.12: ESTIMATED WOOD FUEL CONSUMPTION

URBAN OWNERS	43,170 x 2.6 x 21.6 x 46.0	=	11,152
URBAN RENTERS	43,170 x 0 x 17.7 x 0.0	=	0
RURAL OWNERS	43,170 x 5.7 x 52.6 x 65.0	=	84,131
RURAL RENTERS	43,170 x 4.7 x 8.1 x 31.0	=	5,094
TOTAL			100,377 cords

Based on an estimated 43,170 households (CMHC projection) and correcting for the rural and owner bias, it was calculated that the total residential wood consumption in the 1990-91 season was about 100,377 cords. The comparable figure in the 1989 survey was 89,000 cords. This represents an increase of 11,377 cords from the total consumption calculated for the 1988-89 survey.

4.0 WOOD CUTTERS

The following series of tables summarize the findings with respect to wood cutters.

TABLE 4.1: WOOD CUTTERS SOURCE OF WOOD FUEL (UNWEIGHTED)

	1991 SURVEY		1989-1990 SURVEY
	#	%	%
Wood Cutters Own Woodlot	113*	85.6	83.9
Friend/Neighbour's Woodlot	15	11.4	15.0
Crown Land	2	1.5	1.1
Own and Friend's Woodlot	2	1.5	-
TOTAL	132*	100.0	100.0

* These numbers include 4 wood users who both cut and buy wood.

Not surprisingly, wood cutters continue to cut wood from their own woodlots.

TABLE 4.2: WOOD CUTTERS HARVESTING METHODS (UNWEIGHTED)

	1991 SURVEY		1989-1990 SURVEY
	#	%	%
Clear Cutting	45	29.4	30.1
Salvaging Dead Trees	31	20.3	23.7
Thinning Poor Stock	36	23.5	6.5
Pick and Choose	29	19.0	28.0
Don't Know	12	7.8	11.8
TOTAL	153*	100.0	100.0

* Some respondents gave more than one answer

Clear cutting has remained constant since the last survey. The most notable change harvesting methods is that more wood cutters appear to be thinning old stock. Data are not completely comparable to the previous survey as respondents cited more than one answer.

TABLE 4.3: PERIODS FOR HARVESTING FUEL WOOD (UNWEIGHTED)

	1991 SURVEY		1989-1990 SURVEY
	#	%	%
January-March	24	18.2	16.1
April-June	17	12.9	24.7
July-September	26	19.7	16.1
October-December	55	41.7	43.1
Throughout the Year	8	6.1	-
Don't Know	2	1.5	-
TOTAL	132	100.0	100.0

Late fall continues to be the most popular time for harvesting wood fuel with more respondents harvesting in early winter than in the spring months. This practice does not allow the wood enough time to become seasoned unless it is held for a full year.

A more detailed analysis of survey results indicates that most respondents (65.7%) who cut their own wood reported that they moved their wood from stump to roadside or home by using a tractor/trailer. The second most frequent response was manual/truck (25.2%). Other responses (9.1%) included tractor/winch, horse and snow mobile/ ATV.

TABLE 4.4: WOODLOTS INVOLVEMENT IN THE GOVERNMENT SPONSORED FORESTRY MANAGEMENT PROGRAM (UNWEIGHTED)

	1991 SURVEY	
	#	%
Yes	19	16.5
No	87	75.7
Don't know	9	7.8
TOTAL	115	100.0

Of the 132 woodcutters, 115 reported that they cut from their own woodlots. Of these, 19 respondents (16.5%) indicated that they were participants in the government sponsored forestry management program. Of the remainder, 26 requested further information on the program.

5.0 WOOD BUYERS

The following series of tables summarize the findings with respect to wood buyers. Weighted percentages are used where appropriate.

TABLE 5.1: CHARACTERISTICS OF FUEL WOOD AT TIME OF PURCHASE (WEIGHTED)

	URBAN			RURAL		TOTAL		
	Act #	Wtd #	%	Act #	%	Act #	Wtd #	Wtd %
Blockd	10	22	41.7	41	43.6	51	63	42.9
Blockd & Splt	9	19.8	37.5	19	20.2	28	38.8	26.4
8 Foot Length	4	8.8	16.7	25	26.6	29	33.8	23.0
Blockd Slabs	1	2.2	4.2	2	2.1	3	4.2	2.9
Tree Length	0	0	0	2	2.1	2	2	1.4
8 Foot Slabs	0	0	0	2	2.1	2	2	1.4
Chips/ Sawdst	0	0	0	2	2.1	2	2	1.4
4 Foot Length	0	0	0	1	1.1	1	1	0.7
TOTAL	24	52.8	100.0	94	100.0	118	146.8	100.0

Table 5.1 provides a summary of the form in which wood is purchased. The most prevalent response was blocked. A total of 79.2% of urban respondents reported that the wood was blocked or blocked and split, compared to 63.8% of rural respondents.

TABLE 5.2: SEASON FOR PURCHASING WOOD (UNWEIGHED)

	1991 SURVEY		1989-1990 SURVEY
	#	%	%
January-March	10	8.5	2.9
April-June	11	9.3	26.7
July-September	66	55.9	37.1
October-December	27	22.9	33.3
Don't Know	4	3.4	-
TOTAL	118	100.0	100.0

The current survey indicates a significant change in purchasing pattern by wood users, with increased purchases in early Fall.

TABLE 5.3: PRICE PAID PER CORD OF WOOD (UNWEIGHTED)

	Including Delivery	Buy In Cords				
	#	#	%	Mean	Median	Range
Blocked	26	30	37.0	$85.63	$90.00	$110-$40
Blocked & Split	20	22	27.2	$91.32	$90.00	$125-$65
8 Ft Lngth	23	24	29.6	$67.79	$70.00	$100-$20
Other	3	5	6.2	$57.00	$60.00	$85-$10
TOTAL	72	81	100.0			

The survey findings revealed a wide discrepancy in prices paid per cord of wood.

6.0 NON-WOOD FUEL USERS

A series of questions were asked of non-wood burners to determine whether they had burned wood in the past, why they had stopped and what would encourage them to burn wood again. Of the 200 non-wood users, 35 had used wood in the past (17.5%).

TABLE 6.1: YEARS AGO NON-WOOD USERS STOPPED USING WOOD (UNWEIGHTED)

	1991 SURVEY	
	#	%
1 -2 Years	9	25.7
3 -4 Years	9	25.7
5 -6 Years	5	14.3
7 -10 Years	2	5.7
11-20 Years	3	8.6
21 Years and over	6	17.1
No Response	1	2.9
TOTAL	35	100.0

Of the 35 non-wood users who had burned wood in the past, the majority (65.7%) had stopped using wood six years ago or less.

TABLE 6.2: REASONS FOR NOT USING WOOD (UNWEIGHTED)

	1991 SURVEY	
	#	%
Wood is too much work	15	42.9
Health concerns	4	11.4
No longer have access to cheap wood (own woodlot)	4	11.4
Wood is too messy	4	11.4
Wood is too expensive	3	8.6
Safety reasons	3	8.6
Need a new chimney	1	2.9
Don't know (no response)	1	2.9
TOTAL	35	100.0

The most prevalent reason for not using wood was the labour involved.

TABLE 6.3: MOTIVATION TO BECOME A WOOD USER

	1991 SURVEY	
	#	%
Nothing	102	50.5
Price	44	21.8
Don't know	18	8.9
Threat to other fuel supply	10	5.0
Own woodlot	8	4.0
Accessibility to wood source	7	3.5
Other	6	3.0
Safer features	2	1.0
Set up for wood	2	1.0
Storage room	1	0.5
Environmentally friendlier	1	0.5
New equipment	1	0.5
TOTAL	202*	100.0

* 2 respondents gave two answers to the question

Among non-wood users about half indicated that nothing would motivate them to use wood. The second most frequent response was that price would motivate them to use wood.

7.0 WOOD FUEL ATTITUDES

A series of questions were asked of both wood and non-wood users to gauge attitudes of respondents towards heating with wood. The section following summarizes the findings.

All respondents were asked to identify the major advantages and disadvantages of heating with wood.

TABLE 7.1: ADVANTAGES OF HEATING WITH WOOD (WEIGHTED)

7.1A: URBAN RESPONSES

	URBAN					
	WOOD USERS			NON-USERS		
	Act #	Wtd #	%	Act #	Wtd #	Wtd %
Price	10	22	32.3	18	39.6	24.3
Quality of Heat	13	28.6	41.9	10	22	13.5
No Advantages	5	11	16.2	29	63.8	39.2
Sec. of Supply	0	0	0	3	6.6	4.1
Set up for wood	0	0	0	0	0	0
Atmosphere	0	0	0	2	4.4	2.7
Other	0	0	0	3	6.6	4.1
Don't Know	3	6.6	9.7	9	19.8	12.2
TOTAL	31	68.2	100.0	74	162.8	100.0

7.1B: RURAL AND TOTAL RESPONSES

	RURAL				TOTAL URBAN & RURAL		
	WOOD USERS		NON-USERS				
	Act #	%	Act #	%	Act #	Wtd #	Wtd %
Price	136	49.5	28	21.2	192	225.6	39.2
Qual. of Heat	90	32.7	24	18.2	137	101.5	17.7
No Advantages	17	6.2	58	43.9	109	149.8	26.1
Sec of Supply	18	6.5	2	1.5	23	26.6	4.6
Set up fr wood	6	2.2	2	1.5	8	8	1.4
Atmosphere	4	1.5	1	0.8	7	9.4	1.6
Other	2	0.8	1	0.8	6	9.6	1.7
Don't Know	2	0.7	16	12.1	30	44.4	7.7
TOTAL	275	100.0	132	100.0	512	574.9	100.0

The preceding table clearly outlines the different views among rural and urban wood users and non-users. The most frequent response among the urban and rural non-wood users (42.2%) was that there was no advantage to using wood. The most frequent response among the rural wood users was price; the most frequent response among urban wood users was the quality of heat. Further analysis of survey results indicates that female respondents were far more likely to cite the quality of heat as an advantage than male respondents.

TABLE 7.2: DISADVANTAGES OF HEATING WITH WOOD

7.2A: URBAN RESPONSES

	URBAN					
	WOOD USERS			NON-USERS		
	Act #	Wtd #	%	Act #	Wtd #	Wtd %
Labour intensive	9	19.8	25.0	21	46.2	22.8
Dirty	15	33	41.7	16	35.2	17.4
Safety	1	2.2	2.8	19	41.8	20.7
No Disadvantages	1	2.2	2.8	7	15.4	7.6
Undepend. absnce	2	4.4	5.6	1	2.2	1.1
Storage	0	0	0	2	4.4	2.2
Difficult supp.	2	4.4	5.6	0	0	0
Cost of Wood	0	0	0	2	4.4	2.2
Creosote	3	6.6	8.3	2	4.4	2.2
Unpredictable	0	0	0	2	4.4	2.2
No Therm. ctrl	1	2.2	2.8	1	2.2	1.1
Pollution	0	0	0	3	6.6	3.3
Cost of Equip	0	0	0	4	8.8	4.4
Bugs	0	0	0	1	2.2	1.1
Other	0	0	0	1	2.2	1.1
Don't Know	2	4.4	5.6	10	22	10.9
TOTAL	36	79.2	100.0	92	202.4	100.0

7.2B: RURAL AND TOTAL RESPONSES

	RURAL				TOTAL URBAN & TOTAL		
	WOOD USERS		NON-USERS				
	Act #	%	Act #	%	Act #	Wtd #	Wtd %
Lab. Intensive	80	28.3	49	25.5	159	195	25.8
Dirty	89	31.4	33	17.2	153	190.2	25.1
Safety	19	6.6	30	15.6	69	93	12.3
No Disadvantge	41	14.5	10	5.2	59	68.6	9.1
Undep. absence	16	5.7	6	3.1	25	28.6	3.8
Storage	7	2.5	8	4.2	17	19.4	2.6
Diff. Supply	5	1.8	9	4.7	16	18.4	2.4
Cost of Wood	4	1.4	10	5.2	16	18.4	2.4
Creosote	4	1.4	5	2.6	14	20	2.6
Unpredictable	4	1.4	4	2.1	10	12.4	1.6
No Therm Ctrl	1	0.4	4	2.1	7	9.4	1.2
Pollution	1	0.4	3	1.6	7	10.6	1.4
Cost of Equip	0	0	3	1.6	7	11.8	1.6
Bugs	3	1.1	2	1.0	6	7.2	1.0
Other	4	1.4	6	3.1	11	12.2	1.6
Don't Know	5	1.8	10	5.2	27	41.4	5.5
TOTAL	283	100.0	192	100.0	603	756.6	100.0

The major disadvantage cited by wood users was that using wood is 'dirty'; the major disadvantage cited by non-wood users was that it was labour intensive. The safety issue was a greater concern to non-wood users. Further analysis of survey results indicates

that female respondents were far more likely to cite 'dirty' as a disadvantage; men were more likely to cite labour intensive as the major disadvantage.

TABLE 7.3: ATTITUDE TOWARDS THE IMPACT OF THE GULF SITUATION ON WOOD FUEL

	URBAN			RURAL		TOTAL		
	Act #	Wtd #	%	Act #	%	Act #	Wtd #	%
No Change	65	143	63.7	296	85.1	361	439	76.7
Use < Oil	14	30.8	13.7	28	8.0	42	58.8	10.3
< Oil > Wood	3	6.6	2.9	16	4.6	19	22.6	3.9
< Oil > Othr	0	0	0	3	0.9	3	3	0.5
Don't Know	20	44	19.6	5	1.4	25	49	8.6
TOTAL	102	224.4	100.0	348	100.0	450	572.4	100.0

The situation in the Gulf had little impact on fuel consumption. Of the 64 who indicated that it had affected their fuel consumption, the reason cited in all cases was the increased price of oil.

TABLE 7.4: PRESENT HEATING SYSTEMS (UNWEIGHTED)

	1991 SURVEY	
	#	%
Wood Unit	218	48.4
Combination wood/oil furnace	28	6.2
Hot water oil furnace	198	44.0
Hot air oil furnace	147	32.7
Oil space heater	10	2.2
Propane	17	3.8
Solar	3	0.7
Kemac	12	2.7
Electric heat	18	4.0
Kerosene heater	9	2.0
Heat supplied by landlord	15	3.3
Hot water sawdust	1	0.2
TOTAL	676*	150.2**

*Some respondents identified more than one heating system.
**Percentages total more than 100% due too multiple responses.

TABLE 7.5: PREFERRED HEATING SYSTEM(S) (UNWEIGHTED)

	#	%
Hot Water Oil Furnace	154	34.2
Combination Wood/Oil Furnace	115	25.6
Wood Unit	109	24.2
Hot Air Oil Furnace	53	11.8
Solar	22	4.9
Electric Heat	16	3.6
Propane	11	2.4
Sawdust	5	1.1
Natural Gas	3	0.7
Woodchips	1	0.2
Don't Know	17	3.8
TOTAL	506*	112.5

*Some respondents identified more than one heating system.
**Percentages total more than 100% due too multiple responses.

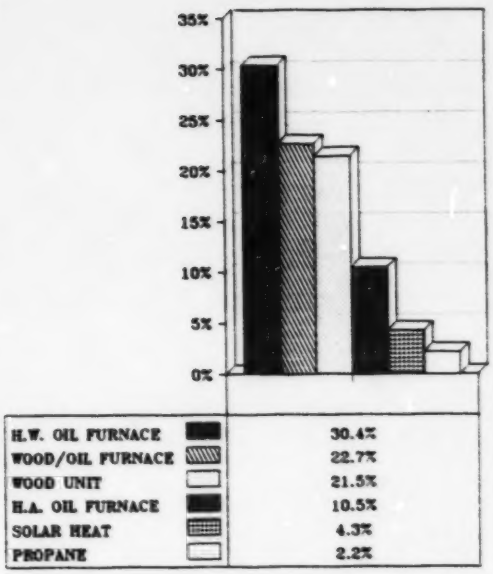
Table 7.4 summarizes the current heating system of respondents.

All respondents were asked what heating system(s) they would install if they were building a new home. Table 7.5 summarizes the findings.

Only 11.8% indicated that they preferred a hot air oil furnace compared to 32.7% who currently use one. The table also demonstrates a significant interest in solar heating systems. Preferred heating systems are depicted graphically in Chart 7.5.

A comparison of the two tables reveals that if they were building a new home less respondents would install a wood heating system (49.8%) than they are currently using (54.6%). There is a clear preference for a combination wood/oil furnace to other types of wood units.

PREFERRED HEAT SYSTEMS
PART 1



PREFERRED HEAT SYSTEMS
PART 2

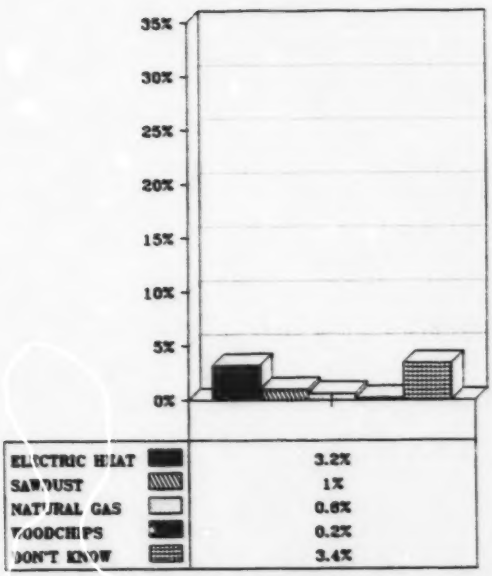


CHART 7.5

8.0 CONCLUSIONS

The following summarizes the findings of the 1991 wood fuel survey.

PROFILE RESPONDENTS

- Using a weighted total, adjusted for the rural bias, about half (49.8%) the respondents reported that they burned wood. This represents an increase from the 1989 survey findings which was estimated at 42%.

- The majority of rural respondents (63.5%) were wood users and the majority of urban respondents (71.5%) were non-wood users.

- Wood users have a much larger percentage of respondents with households consisting of four or more persons (52%) compared to non-users (28%).

- The higher the income category, the less likely respondents were to use wood as a primary heating source.

PROFILE OF WOOD FUEL USERS

- As the household income of respondents increases the less likely they are to use wood as their sole heating source and concurrently the more likely they are to use wood as a secondary heating source.

- Overall, respondents reported that they will consume less wood fuel this heating season compared to last year. The majority (70%) indicated that the effect of fuel prices has had no impact on their use of wood fuel.

- Urban respondents reported burning a range of .5 to 7 cords per season, a mean of 2.6 cords and a median of 2 cords. The rural respondents reported a range of .25 to 20 cords, a mean of 5.64 cords and a median of 5 cords.

- The overall average consumption of wood burners was estimated to be 4.92; this is consistent with the 1989 survey estimate of 4.90 cords per season.

- Based on an estimated 43,170 households (CMHC projection) and correcting for the rural and owner bias, it was calculated that the total residential wood consumption in the 1990-91 season was about 100,377 cords.

WOOD CUTTERS

- Wood cutters represent 23.4% of the respondents.

- With respect to harvesting methods, clear cutting has remained constant since the last survey at about 30%; the only significant change in harvesting methods is the increase in thinning of poor stock.

- Most wood cutters cut from their own woodlots; 16.5% of these are involved in the government sponsored forestry management program.

WOOD BUYERS

- Wood buyers represent 25.4% of the respondents.

- Most wood buyers (63.8%) purchase their wood blocked or blocked and split.

- The median price paid for wood blocked or blocked and split was $90, with a range of $65 to $125.

NON-WOOD FUEL USERS

- Using a weighted total, about half of the respondents (50.2%) reported that they were non-wood users.

- Of those non-users 17.5% indicated that they had used wood in the past.

- The most prevalent reason cited for discontinuing wood use was the labour involved.

- About half (50.5%) of the non-wood using respondents indicated that nothing would motivate them to use wood. The second most frequent response was that price would motivate them to burn wood.

WOOD FUEL ATTITUDES

- Advantages of heating with wood cited by respondents demonstrated the different views held among rural and urban wood users and non-users.

  - the most frequent response among the urban and rural non-wood users was that there was no advantage to using wood;

  - the most frequent response among the rural wood users was price;

  - the most frequent response among urban wood users was the quality of heat.

- The major disadvantages cited by wood users was that using wood is 'dirty'; the major disadvantage cited by non-wood users was that it was labour intensive. The safety issue was a greater concern to non-wood users.

- The situation in the Gulf had little impact on fuel consumption. Of the 64 who indicated that it had affected their fuel consumption, the reason cited in all cases was the increased price of oil.

- A comparison of current heating systems and preferred heating systems revealed that less respondents would install a wood heating system (49.8%) than they are currently using (54.6%) if they were building a new house. There was clear preference for a combination wood/oil furnace to other types of wood units.

APPENDIX A

SURVEY INSTRUMENT

1991 WOOD FUEL SURVEY

Number_____ Interviewer_____ Telephone_____
Dates and Times called
1)_____ 2)_____ 3)_____
4)_____ 5)_____

A. BACKGROUND

A1. Sex: 1) M 2) F

A2. County: 1) P 2) Q 3) K

A3. Address: 1) Wilmot, Summerside, St. Eleanors
2) Charlottetown, Sherwood, Parkdale, East or West Royalty, Southport, Bunbury, Cornwall
3) None of the above

A4. Home type: 1) 1 story detached 2) split-level 3) row house
4) 2 or more story detached 5) apartment
6) duplex 7) mobile home 8) other_____

A5. Age of home: 1) 1980-90 2) 1970-79 3) 1960-69 4) 1945-59
5) 1900-44 6) in the 1800's 0) don't know

A6. What fuel do you use most to heat your home? _____ (no. from A7)

A7. What other fuels do you use to heat your home?

1) Wood 2) Oil 3) Electricity 4) Propane 5) District Heat
6) Kerosene 7) Solar 8) Sawdust
9) Other_____ 0) don't know

A8. What is your primary heating system? ____(number from A9)

A9. What other type(s) of heating systems do you have in your home?

1) wood unit
2) combination wood/oil furnace
3) hot water oil furnace
4) hot air oil furnace
5) oil space heater
6) propane
7) solar
8) district heating
9) Kemac
10) electric heat
11) kerosene heater
12) heat supplied by landlord
13) coal
14) other_____
0) don't know

A10. Has the situation in the Gulf affected your fuel consumption in any way?

1) no change
2) don't use oil
3) less oil (lower thermostat)
4) less oil and more wood
5) less oil and more non-wood fuel
6) other_____
0) don't know

A11. Why?

1) price of oil 2) availability of oil (security of supply)
3) not applicable 4) other_____ 0) don't know

A12. What do you consider to be the major advantage, if any, of heating with wood?

1) price
2) set up for wood
3) quality of heat
4) no advantages
5) security of supply
6) other_____
0) don't know

A13. What do you consider to be the major disadvantages, if any, of heating with wood? What is the greatest disadvantage? ____(number from below)

1) bugs
2) creosote build-up
3) too heavy
4) storage
5) dirty
6) difficulty in obtaining wood
7) unpredictable heat
8) not dependable in absence
9) cost of equipment
10) chopping/cutting the wood/kindling
11) cost of wood
12) safety
13) no thermostat control
14) no disadvantages
15) other_____
0) don't know

IF USING WOOD GO TO SECTION B. IF NOT, GO TO SECTION E.

B. WOOD USERS

B1. What wood burning unit do you have in your home?

1) Kemac
2) airtight wood stove
3) wood furnace
4) fireplace insert
5) kitchen wood stove
6) Franklin/non-airtight
7) combination wood/oil furnace
8) fireplace (open)
0) don't know

B2. For what primary purpose(s) do you use these units?

1) cooking food
2) for warmth/heat
3) pleasant atmosphere
4) other_____
0) don't know

B3. How is your domestic hot water heated?

1) oil 2) electricity 3) solar 4) wood 5) propane
6) other_____ 0) don't know

B4. How long have you been using wood on a continuous basis as your primary heating fuel?

1)_____years 0) don't know

B5. Are you burning green or seasoned wood?

1) green 2) seasoned 3) mixture of both 0) don't know

B6. How many cords of wood do you expect to burn during the 1990-91 heating season?

1) _____cords 0) don't know

B7. How does this compare with the 1989-90 season?

1) about the same 2) more 3) less 4) none last year
0) don't know

B8. What effect did the price of fuel oil during 1990-1991 have on your wood fuel use during this heating season?

1) to use more wood 3) use less wood
2) stay about the same 4) switch to oil 0) don't know

B9. Where are you getting your wood?

1) cut from woodlot 2) purchase

IF WOOD PURCHASERS GO TO SECTION D.

C. WOODLOT CUTTERS

C1. What type of cutting are you doing from the woodlot?

1) clear cutting 2) salvaging dead trees
3) thinning poor stock 4) pick and choose 0) don't know

C2. What kind of wood are you cutting for your fuel?

1) only softwood 3) H(50%), S(50%)
2) mixture: H(75%), S(25%) 4) H(25%), S(75%)
5) only hardwood (with less than 25% being poplar, pin cherry or white birch)
6) only hardwood (with more than 25% being poplar, pin cherry or white birch)
0) don't know

C3. How do you get wood from stump to roadside or house?

1) tractor/trailer
2) tractor/winch
3) horse
4) snowmobile/ATV
5) skidder (porter-forwarder)
6) manual/truck
7) portable winch
0) don't know

C4. At what time of the year do you usually cut your supply of wood?

1) Jan.-Mar. 2) Apr.-June 3) July-Sept. 4) Oct.-Dec.)

C5. Can you get enough hardwood to cut for the next 5 years?

1) Yes 2) No 0) don't know

C6. **(for hardwood cutters)** If you can't harvest enough hardwood what would you do?

1) burn the available hardwood and burn more softwood
2) burn the available hardwood and some fuel oil
3) switch to fuel oil only
4) buy hardwood elsewhere if possible
0) don't know

C7. Where are you cutting your wood fuel?

1) personal woodlot* 2) friend's woodlot 3) Crown land

C8*. Is your woodlot involved in the government sponsored Forestry Management Program? 1) yes 2) No♦ 0) don't know

If "NO" would you like further information re program?

♦ PLEASE GET NAME AND ADDRESS

GO TO SECTION F.

D. WOOD PURCHASERS

D1. How are you buying your wood?

1) 8 ft. lengths
2) 4 ft. lengths
3) blocked
4) blocked and split
5) tree length
6) 8 ft. length slabs
7) blocked slabs
8) wood chips/sawdust
0) don't know

D2. What kind of wood are you buying?

1) only softwood
2) only hardwood
3) mixture: H(75%, S(25%)
4) H(50%), S(50%)
5) H(25%), S(75%)
0) don't know

D3. How much did you pay for fuel wood this heating season (1990-1991)?

1)_____cord 2)_____face cord 3)_____¼ ton truck
4)_____½ ton truck 5)_____ton truck 6) _____ other
7) wood not bought this season _____0) don't know _____

D4. Does the price you paid for wood include delivery?

1) Yes 2) No 3) Don't know

D5. At what time of year do you usually purchase your supply of wood?

1) January - March 2) April - June 3) July - September
4) October - December 0) don't know

D6. Are you confident you will be able to buy an adequate supply of hardwood over the next 5 yrs? 1) Yes 2) No 0) don't know

D7. If you can't buy enough hardwood what would you do?

1) burn the available hardwood and burn more softwood
2) burn the available hardwood and some fuel oil
3) switch to another fuel or heating system
0) don't know

GO TO SECTION F.

E. NON-WOOD USERS

E1. Have you ever used wood as a primary heating source in your present home? 1) Yes___ 2) No ___

E2. If "YES", when did you stop using wood? 1) _____ years ago

E3. If you used wood in the past, why did you stop?

1) health concerns
2) no longer have access to cheap wood (own woodlot)
3) wood is too much work
4) wood is too messy
5) wood is too expensive
0) don't know

E4. What would encourage you to start burning wood to heat your home?

1) price 2) own woodlot 3) capital grant
4) threat to other fuel supply 5) accessibility to wood source
6) other_____ 7) nothing 0) don't know

F. PERSONAL

F1. Do you? 1) own your own home 2) rent

F2. How many people are there in your household?

1) one 2) two 3) three 4) four 5) five 6) more than 5

F3. What year were you born? _____

F4. Which of the following broad income categories best describes your total household income? (the combined income of everyone in your household, before taxes)

1) less than $15,000
2) less than $35,000
3) less than $50,000
4) $50,000 or over
5) choose not to answer

F5. If you were building a new home, what type of heating system would you install?

1) wood unit
2) combination wood/oil furnace
3) hot water oil furnace
4) hot air oil furnace
5) oil space heater
6) propane
7) solar
8) district heating
9) Kemac
10) electric heat
11) kerosene heater
12) heat supplied by landlord
13) coal
14) other_____
0) don't know